

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(PCT Rule 71.1)

|  |  |   |  |
|--|--|---|--|
| <b>To:</b><br><br>RACKETTE Partnerschaft<br>Patent Attorneys<br>Kaiser-Joseph-Strasse 179<br>Postfach 13 10<br>79013 Freiburg<br>GERMANY<br><br><div style="text-align: right;"> [Stamp:]<br/> RECEIVED<br/> 17 AUG. 2005<br/> [Handwriting illegible] </div>  |  | <div style="text-align: center;"> <b>DATE OF MAILING</b><br/> 16.08.2005 </div> |  |
| Applicant's or agent's file reference<br>UKZ-P004WO  |  | <b>IMPORTANT NOTIFICATION</b>   |  |
| International application No.<br>PCT/DE2004/000835   | International filing date<br>(day/month/year) 22.04.2004 | Priority date (day/month/year)<br>07.05.2004                                    |  |
| Applicant<br>UNIVERSITÄT KONSTANZ et al.   |  |   |  |
| <p>1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.</p> <p>2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.</p> <p>3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.</p> <p><b>4. REMINDER</b><br/> The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).</p> <p>Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.</p> <p>For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the <i>PCT Applicant's Guide</i>.</p> <p>The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State...may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.</p> |  |   |  |
| Name and mailing address of the IPEA<br>European Patent Office<br>D-80298 Munich<br>Telephone: +49 89 2399-0<br>Telex: 523656 epmu d<br>Fax: +49 89 2399-4465  |  | Authorized officer<br><br>Andreatta, R.<br><br>Telephone No.: +49 89 2399-2231  |  |

Form PCT/IPEA/416 (January 2004)

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

## PCT

### PATENT COOPERATION TREATY

(Chapter II of the Patent Cooperation Treaty)

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| Applicant's or agent's file reference<br>UKZ-POO4WO  | <b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416                   |   |
| International application No.<br>PCT/DE2004/000835   | International filing date ( <i>day/month/year</i> )<br>22.04.2004 | Priority date ( <i>day/month/year</i> )<br>07.05.2003 |
| International Patent Classification (IPC) or national classification and IPC<br>H01L21/306 |   |   |
| Applicant<br>UNIVERSITÄT KONSTANZ et al.   |   |   |

|    |   |
|----|---|
| 1. | This report is the international preliminary examination report, established by the International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.  |
| 2. | This REPORT consists of a total of 5 sheets, including this cover sheet.  |
| 3. | <p>This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p style="margin-left: 20px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 20px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers to contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. 1 and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> |

|   |  |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
|---|--|---|---------------------|-------------------------------------|----------|--------------------------------------|--|-------------------------------------|----------------------------|---|---|-------------------------------------|-------------------------|--------------------------------------|--|---------------------------------------|---|
| 4.  | <p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/> Box No. I | Basis of the report | <input type="checkbox"/> Box No. II | Priority | <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> Box No. VI | Certain documents cited | <input type="checkbox"/> Box No. VII | Certain defects in the international application | <input type="checkbox"/> Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> Box No. I | Basis of the report  |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. II           | Priority   |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. III          | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. IV           | Lack of unity of invention   |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. VI           | Certain documents cited  |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. VII          | Certain defects in the international application   |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |
| <input type="checkbox"/> Box No. VIII         | Certain observations on the international application  |   |                     |                                     |          |                                      |  |                                     |                            |   |   |                                     |                         |                                      |  |                                       |   |

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|--|---|
| Date of submission of the demand<br>07.01.2005   | Date of completion of this report<br>16.08.2005                             |
| Name and mailing address of the IPEA:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399-0<br>Telex: 523656 epmu d<br>Fax: +49 89 2399-4465 | Authorized officer<br><br>Kenevey, K.<br><br>Telephone No. +49 89 2399-7171 |

PRELIMINARY INTERNATIONAL  
REPORT ON PATENTABILITYInternational Application No.  
EP2004/000835

JC20 Rec'd PCT/PTO 31 OCT 2005

**Box No. I. Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise stated in this section.

- ☐ The report is based on a translation from the original language into the following language, \_\_\_\_\_, which is the language of the translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets that have been furnished to the receiving office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed hereto)*:

**Description, pages**

1-10 as originally filed

**Claims, No.**

1-9 as originally filed

**Drawings, Sheets**

1/6-6/6 as originally filed

- ☐ a sequence listing and/or any related tables – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
- ☐ description, pages
  - ☐ claims: Nos.
  - ☐ drawings: sheet/fig.
  - ☐ sequence listing (*specify*):
  - ☐ any tables related to the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since in the opinion of the authority they go beyond the disclosure as filed, for the reasons stated in the Supplemental Box (Rule 70.2 c)).
- ☐ description, pages
  - ☐ claims: Nos.
  - ☐ drawings: sheet/fig.
  - ☐ sequence listing (*specify*):
  - ☐ any tables related to the sequence listing (*specify*):

*\*If Item 4 applies, some or all of those sheets may be marked "superseded."*

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**Box No. V. Reasoned statement under Article 35(2) as to novelty, inventive step and industrial applicability; citations and explanations in support of said statement**

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1. Statement

|             |      |                   |
|-------------|------|-------------------|
| Novelty (N) | Yes: | Claims            |
|             | No:  | Claims 1, 2, 4, 9 |

|                    |      |               |
|--------------------|------|---------------|
| Inventive step (S) | Yes: | Claims        |
|                    | No:  | Claims 3, 5-8 |

|                               |      |            |
|-------------------------------|------|------------|
| Industrial applicability (IA) | Yes: | Claims 1-9 |
|                               | No:  | Claims     |

2. Citations and explanations

**See supplemental sheet**

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**Re Item V**

**Reasoned statement as to novelty, inventive step and industrial applicability; citations and explanations in support of said statement**

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The following documents are referred to:

D1: DE 199 62 136 A (MERCK PATENT GMBH), June 28, 2001 (2001-06-28)

D2: US B1 6,309,467 (PICHLER HERBERT ET AL) October 30, 2001 (2001-10-30)

- 1 The application does not satisfy the requirements of Art. 6 PCT, since Claims 1, 2 and 5 are not clear. Said claims are not clear because the percentage ratios are not defined. "Percent" could mean volume percent, mole percent, gram percent, and so on. It is noted that the term "percent" is not defined anywhere in the description.

Claims 1, 2 and 5 are further unclear because the term "concentrated" has no precise meaning.

- 2 The present application does not satisfy the requirements of Art. 33(1) PCT, since the subject matter of Claims 1, 2, 4 and 9 is not novel in the sense of Art. 33(2) PCT.

- 2.1 Document D1 discloses (column 3, lines 39-63):

A method for texturing surfaces of silicon wafers comprising the steps of dipping the silicon wafers in an etching solution of water, concentrated hydrofluoric acid and concentrated nitric acid and setting a temperature for the etching solution, characterized in that the etching solution comprises, in percent, 20% to 55% water, 10% to 40% concentrated hydrofluoric acid and 20% to 60% concentrated nitric acid and in that the temperature of the etching solution is between 0 and 15 degrees Celsius.

The subject matter of Claim 1 is therefore not novel.

- 2.2 With regard to Claim 2, D1 further discloses (column 3, lines 56-58):

The etching solution comprises, in percent, 30% to 40% water, 15% to 30% concentrated hydrofluoric acid and 30% to 50% concentrated nitric acid.

2.2 [sic] With regard to Claim 4, D1 further discloses (column 3, lines 60-63):

The silicon wafers remain in the etching solution for 2 to 30 minutes.

2.3 With regard to Claim 9, D1 further discloses (column 3, lines 13-19):

The silicon wafers are polycrystalline.

3 The present application does not satisfy the requirements of Art. 33(1) PCT, since the subject matter of Claims 3 and 5-8 is not based on an inventive step in the sense of Art. 33(3).

3.1 With regard to Claims 3 and 5: the optimum temperature of the etching solution and the treatment time would be determined by the skilled person in experimental trials.

It is noted that a treatment temperature of between 8 and 10 degrees Celsius is disclosed in D2 (column 4, lines 26-28). It would be obvious to the skilled person to combine the teachings of Documents D1 and D2.

Since the term "percent" in Claim 5 is not clear, no inventive step is acknowledged.

3.2 With regard to Claims 6-8: The skilled person would decide on the basis of preference how the silicon wafers should be oriented and whether the etching solution or the wafers should be moved.